

**WHAT IS CLAIMED IS:**

1. A thermally tunable optical fiber device comprising:

a length of optical fiber including the thermally tunable device; and

circumferentially surrounding the thermally tunable device, a microcapillary heater for thermally tuning the device, the heater comprising a microcapillary tube having an effective outside diameter of less than about 2 mm and an electrically resistive heater formed on or constituting the tube.

2. The tunable fiber device of claim 1 wherein the thermally tunable device comprises a fiber grating.

3. The tunable fiber device of claim 1 wherein the thermally tunable device comprises a fiber Bragg grating.

4. The tunable fiber device of claim 1 wherein the thermally tunable device comprises a fiber long period grating.

5. The tunable fiber device of claim 1 wherein the heater comprises a resistive coating on the surface of the tube.

6. The tunable fiber device of claim 1 wherein the heater comprises a plurality of resistive coatings angularly spaced apart around the periphery of the tube.

7. The tunable fiber device of claim 1 wherein the tube comprises an electrically resistive material, and the heater comprises the resistive material of the tube.

8. The tunable fiber device of claim 1 further comprising an additional heater on the fiber.

9. A thermally tunable optical fiber device comprising:

a length of optical fiber including the thermally tunable device; and

circumferentially surrounding the thermally tunable device, a heater for thermally tuning the device, the heater comprising a plurality of nested tubes, each nested tube including an electrically resistive heater.

10. The tunable fiber device of claim 9 wherein the thermally tunable device comprises a fiber grating.